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| 09/777,002 | 02/05/2001 | Gregory Hagan Moulton | UND005 | 5465 |

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| EXAMINER |
|---|
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Please find below and/or attached an Office communication concerning this application or proceeding.

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>11 February 2002</u>.
2a)☐ This action is **FINAL**.  2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>1-31</u> is/are pending in the application.
    4a) Of the above claim(s) <u>31</u> is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-30</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☒ Claim(s) <u>1-31</u> are subject to restriction and/or election requirement.

## Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>05 February 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All  b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4,5</u>.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

    A) Claims 1-30, drawn to a system and method for distributed data

       storage classified in class 709, subclass 213.

    B) Claim 31, drawn to computer-to-computer data routing classified

       in class 709, subclass 238.

The inventions are distinct from each other for the following reasons:

Inventions A and B are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention A has separate utility for storing data in a distributive fashion, which is separately usable with or without invention B, which has utility for routing data between network devices. See § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

2. In a phone conversation with Bill Kubida (Reg. No. 29,664) on May 12, 2004, a provisional election was made without traverse to prosecute invention A. Applicant in replying to this office action must make affirmation of this election. Claim 31 is

withdrawn from further consideration by the Examiner, (See 37 CFR 1.142(b)), as being

drawn to a non-elected invention.

## Information Disclosure Statement

1.  The Information Disclosure Statements (IDS) filed on October 5, 2001, and

February 11, 2002, have been received and considered by the examiner.

## Specification

1.  The lengthy specification has not been checked to the extent necessary to

determine the presence of all possible minor errors.  Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the

specification.

## Claim Rejections - 35 USC § 112

1.  The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

2.  Claims 14, 15, 23, are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

3. Claim 14 recites the limitation "the received unit of data", in line 7. There is

insufficient antecedent basis for this limitation in the claim. In order for the examiner to

complete a review of the application for patent, the examiner has interpreted "the

received unit of data" to be "the data storage task".

4. Claim 15 recites the limitation "the desired performance characteristics", in

lines 4 and 6. There is insufficient antecedent basis for this limitation in the claim. In

order for the examiner to complete a review of the application for patent, the examiner

has interpreted "the desired performance characteristics" to be "the desired criteria"

from claim 14.

5. Claim 23 recites the limitation "the desired performance criteria", in line 2.

There is insufficient antecedent basis for this limitation in the claim. In order for the

examiner to complete a review of the application for patent, the examiner has

interpreted "the desired performance criteria" to be "the desired criteria" from claim 14.

### Claim Objections

1. Claim 1 objected to because of the following informalities: The examiner

feels that a semicolon should be placed after "contexts" in line 5, in order to clarify the

limitations being claimed. If the applicant did not intend to place a semicolon behind

"contexts", the examiner suggests that the applicant join line 6 with line 5 to better clarify

what is being claimed. In order for the examiner to complete a review of the application

for patent, the examiner has interpreted the claim with a semicolon behind "contexts" in

line 5. Appropriate correction is required.

## *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-11, 13-30, are rejected under 35 U.S.C. 102(e) as being clearly

anticipated by Carter et al. (hereinafter Carter), U.S. patent 5,987,506.

3. In considering claim 1, Carter discloses a data storage system comprising:

   a) A plurality of storage nodes, each node existing at a physical location and

   having one or more associated contexts, (col. 6, lines 7-12);

   b) Interface mechanisms coupled to each storage node for communicating

   storage access requests with the storage node, and data storage

   management processes that select one or more of the storage nodes to

   serve a data storage request based at least in part upon the particular

   contexts associated with each of the storage nodes, (col. 7, lines 43-49).

4. In considering claim 2, the disclosed system of Carter further teaches the data storage management processes comprising computer-implemented processes executing in at least one of the storage nodes. See col. 6, lines 52-58.

5. In considering claim 3, the disclosed system of Carter teaches the data storage management processes comprising computer-implemented processes executing in all of the storage nodes. See col. 6, lines 52-58.

6. In considering claim 4, it is inherent in the system taught by Carter that the data storage requests are associated with a set of desired criteria. See col. 6, lines 7-14.

7. In considering claim 5, it is inherent in the system taught by Carter that the data storage requests are associated with a set of desired criteria and the data storage management processes comprise processes for matching the desired criteria to the contexts of the storage nodes. See col. 6, lines 7-14.

8. In considering claim 6, the disclosed system of Carter provides a means for the data storage management processes to present a unitary logical volume of data storage to external devices generating the storage access requests to the selected one or more storage nodes. See col. 7, lines 61-64.

9.  In considering claim 7, the disclosed system of Carter further provides a means for selecting one or more storage nodes such that the contexts associated with the unitary logical volume satisfies the desired criteria associated with the one or more storage nodes. See col. 7, lines 64-67.

10. In considering claim 8, it is inherent that the disclosed system of Carter provides a means for the context to comprise a political context. See col. 6, lines 3-21.

11. In considering claim 9, it is inherent that the disclosed system of Carter provides a means for the context to comprise an economic context. See col. 6, lines 3-21.

12. In considering claim 10, it is inherent that the disclosed system of Carter provides a means for the context to comprise a geographic context. See col. 6, lines 3-21.

13. In considering claim 11, it is inherent that the disclosed system of Carter provides a means for the context to comprise a network topological context. See col. 6, lines 3-21.

14. In considering claim 13, the system disclosed by Carter further comprises authentication mechanisms coupled to the interface mechanisms for authenticating storage nodes before communicating storage requests.  See col. 41, lines 1-6.

15. In considering claim 14, Carter discloses a method of managing distributed data storage comprising the acts of:

a) Providing a plurality of distributed storage nodes, (col. 6, lines 37-43);

b) Receiving a data storage task in one of the storage nodes, (col. 6, lines 10-12);

c) Determining desired criteria associated with the data storage task, selecting one or more of the plurality of storage nodes having an associated context satisfying the desired criteria, and executing the storage task in the selected storage node, (col. 6, lines 12-17).

16. In considering claim 15, the disclosed method of Carter further teaches at least two storage nodes collectively satisfying desired criteria.  See col. 7, lines 8-38.

17. In considering claim 16, the disclosed method of Carter further teaches at least two storage nodes located in different geographical locations.  See col. 3, lines 1-5.

18. In considering claim 17, the disclosed method of Carter provides a means for the selected nodes to comprise at least two storage nodes in different areas of a single data center.  See col. 3, lines 1-5.

19. In considering claim 18, the disclosed method of Carter provides a means for the selected nodes to comprise at least two storage nodes in different areas of a single data center, and connected via different network backbones.  See col. 3, lines 1-5.

20. In considering claim 19, the disclosed method of Carter provides a means for the selected nodes to comprise at least two storage nodes in different data centers. See col. 3, lines 1-5.

21. In considering claim 20, the disclosed method of Carter provides a means for the selected nodes to comprise at least two storage nodes in different cities.  See col. 3, lines 1-5.

22. In considering claim 21, the disclosed method of Carter provides a means for the selected nodes to comprise at least two storage nodes in different political jurisdictions.  See col. 3, lines 1-5.

23. In considering claim 22, the disclosed method of Carter provides a means for the selection to be based upon socio-economic attributes of the physical location of the data storage node. See col. 6, lines 12-14.

24. In considering claim 23, it is inherent in the method disclosed by Carter that the step of selecting comprises matching the desired criteria to a context associated with a storage node. See col. 6, lines 12-17.

25. In considering claim 24, the disclosed method of Carter further teaches storing data according to a distributed parity scheme analogous to parity distribution found in RAID subsystems. See col. 23, lines 12-27.

26. In considering claim 25, it is inherent that the method of Carter provides a means for the parity paradigm to comprise an N-dimensional parity mechanism where "N" is greater than three. See Carter, col. 8, lines 39-50.

27. In considering claim 26, the disclosed method of Carter provides a means for storing data in a manner such that the data stored in any one storage node cannot be used in any meaningful fashion without the availability of some or all of the data stored in other storage nodes. See Carter, col. 7, lines 8-38.

28. In considering claim 27, Carter discloses a data storage service comprising:

a) Receiving data storage requests and allocating capacity within network-accessible storage devices to handle the received request, (col. 12, lines 40-43);

b) Maintaining a state information data structure including state information describing the contexts of the network-accessible storage devices, (col. 13, lines 19-58).

29. In considering claim 28, the disclosed service taught by Carter further comprises detecting a change in the state information associated with at least one network-accessible storage device, and updating the state information associated with the at least one network-accessible storage device to include the change in state information. See col. 13, lines 36-58.

30. In considering claim 29, the disclosed service taught by Carter further comprises dynamically re-allocating capacity within the network-accessible storage devices in response to detecting a change in their associated contexts. See col. 12, lines 22-28.

31. In considering claim 30, the disclosed service taught by Carter teaches dynamic re-allocation in the absence of externally generated data storage access requests. See col. 12, lines 22-28.

## *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Carter in view of McClain, U.S. patent 5,794,254 (supplied by applicant).

3. In considering claim 12, the disclosed method of Carter further teaches:

   a) Security mechanisms when communicating, (col. 4, lines 38-50).

Although the disclosed system of Carter shows substantial features of the

claimed invention, it fails to expressly disclose:

   a) Encrypting storage messages before communicating.

Nevertheless, encrypting messages before communicating was well known in the

art at the time of the present invention. This is exemplified in a similar field of endeavor

where McClain discloses a method and system for backing up computer files at a

remote site comprising:

   a) Encrypting a storage message before communicating, (col. 6, lines 48-53).

Given the teachings of McClain it would have been apparent to one of ordinary

skill to modify the teachings of Carter to show encrypting storage messages before

communicating. This would have provided a secure and safe means for storing data

over a network, while preventing the data from being read by unauthorized individuals.

## Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carter et al., U.S. Patent 5,987,506 discloses a system and method for intelligent, globally distributed network storage.

McClain, U.S. Patent 5,794,254 (supplied by applicant), discloses a encrypting a message before communication.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hassan Phillips whose telephone number is (703) 305-8760. The examiner can normally be reached on M-F 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

HP/
5/12/04

FRANTZ B. JEAN
PRIMARY EXAMINER